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EXAMINER

LEWIS, MONICA

ART UNIT PAPER NUMBER

2822

DATE MAILED: 03/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/914,077

Applicant(s)

KAWAMURA ET AL.

Examiner

Monica Lewis

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6,9-19 and 28-31 is/are pending in the application.
- 4a) Of the above claim(s) 9-19,30 and 31 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6,28 and 29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 December 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. This office action is in response to the election filed January 16, 2004.

Response to Arguments

2. Applicant's arguments with respect to claims 1-6, 28 and 29 have been considered but are moot in view of the new ground(s) of rejection.

Specification

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Election/Restrictions

4. Applicant's election with traverse of the Requirement for Restriction/Election on 1/16/04 is acknowledged. The traversal is on the ground(s) that the restriction is not necessary. This is not found persuasive. In the Requirement for Restriction/Election mailed 12/17/03, the Examiner requires restriction between two species of the claimed invention. It is noted that the Applicant has received actions on both species, but because of amendments to the claims, restriction was deemed necessary, as patentability issues concerning each species have become divergent. Moreover, note a proper response to a genus/species restriction is the submission of evidence or the identification of such evidence showing the species to be obvious variants or clearly admit on the record that this is the case.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 2, 4-6, 28 and 29 are rejected under 35 U.S.C. 103(a) as obvious over Droz (U.S. Patent No. 6,176,010) in view of Inoue (U.S. Patent No. 4,960,983).

In regards to claim 1, Droz discloses the following:

a) a conductor (8) constituting said coil having a plurality of adjacent conductive layers (2, 2', 2'', 2''') (For Example: See Figure 6).

In regards to claim 1, Droz fails to disclose the following:

a) a metal-sputtered layer or alternatively a metal-evaporated layer and a metal plated layer.

However, Inoue discloses the use of sputtering metal layers (For Example: See Column 4 Lines 15-27). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor of Droz to include sputtering metal layers as disclosed in Inoue because it aids in providing a connection among the various components (For Example: See Column 4 Lines 15-27).

Additionally, the limitation of "metal-sputtered layer or alternatively a metal-evaporated layer and a metal plated layer" makes it a product by process claim. The MPEP § 2113, states, "Even though product -by[-] process claims are limited by and defined by the process, determination of patentability is based upon the product itself. The patentability of a product does not depend on its method of production. If the product in product-by-process claim is the

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same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product is made by a different process." *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985)(citations omitted).

A "*product by process*" claim is directed to the product per se, no matter how actually made, *In re Hirao and Sato et al.*, 190 USPQ 15 at 17 (CCPA 1976) (footnote 3). See also *In re Brown and Saffer*, 173 USPQ 685 (CCPA 1972); *In re Luck and Gainer*, 177 USPQ 523 (CCPA 1973); *In re Fessmann*, 180 USPQ 324 (CCPA 1974); and *In re Marosi et al.*, 218 USPQ 289 (CAFC 1983) final product per se which must be determined in a "*product by, all of*" claim, and not the patentability of the process, and that an old or obvious product, whether claimed in "*product by process*" claims or not. Note that Applicant has the burden of proof in such cases, as the above caselaw makes clear.

Finally, since Droz and Inoue are both from the same field of endeavor, the purpose disclosed by Inoue would have been recognized in the pertinent art of Droz.

In regards to claim 2, Droz discloses the following:

a) at least one metal of aluminum, nickel, copper and chromium or alternatively an alloy containing those metals (For Example: See Column 3 Lines 39 and 40).

In regards to claim 2, Droz fails to disclose the following:

a) a metal-sputtered layer or alternatively a metal-evaporated layer and a metal plated layer.

However, Inoue discloses the use of sputtering metal layers (For Example: See Column 4 Lines 15-27). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor of Droz to include sputtering metal layers as

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disclosed in Inoue because it aids in providing a connection among the various components (For Example: See Column 4 Lines 15-27).

Additionally, the limitation of "metal-sputtered layer or alternatively a metal-evaporated layer and a metal plated layer" makes it a product by process claim. The MPEP § 2113, states, "Even though product -by[-] process claims are limited by and defined by the process, determination of patentability is based upon the product itself. The patentability of a product does not depend on its method of production. If the product in product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product is made by a different process." *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985)(citations omitted).

A "*product by process*" claim is directed to the product per se, no matter how actually made, *In re Hirao and Sato et al.*, 190 USPQ 15 at 17 (CCPA 1976) (footnote 3). See also *In re Brown and Saffer*, 173 USPQ 685 (CCPA 1972); *In re Luck and Gainer*, 177 USPQ 523 (CCPA 1973); *In re Fessmann*, 180 USPQ 324 (CCPA 1974); and *In re Marosi et al.*, 218 USPQ 289 (CAFC 1983) final product per se which must be determined in a "*product by, all of*" claim, and not the patentability of the process, and that an old or obvious product, whether claimed in "*product by process*" claims or not. Note that Applicant has the burden of proof in such cases, as the above caselaw makes clear.

Finally, since Droz and Inoue are both from the same field of endeavor, the purpose disclosed by Inoue would have been recognized in the pertinent art of Droz.

In regards to claim 4, Droz discloses the following:

a) coil is implemented in a rectangular spiral pattern in a planar shape all or some of corner portions of said rectangular spiral pattern are chamfered (For Example: See Figure 8).

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Note further that Droz teaches that a groove (7) is formed near the corner portions (For Example: See Figure 9). Hence, the corner portions of Droz can be considered "chamfered."

In regards to claim 5, Droz fails to disclose the following:

a) metal-plated layer is formed by resorting to an electroless plating method or alternatively an electroplating method or alternatively a precision electroforming method.

However, the limitation of "electroless plating method or alternatively an electroplating method or alternatively a precision electroforming method" makes it a product by process claim. The MPEP § 2113, states, "Even though product -by[-] process claims are limited by and defined by the process, determination of patentability is based upon the product itself. The patentability of a product does not depend on its method of production. If the product in product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product is made by a different process." *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985)(citations omitted).

A "product by process" claim is directed to the product per se, no matter how actually made, *In re Hirao and Sato et al.*, 190 USPQ 15 at 17 (CCPA 1976) (footnote 3). See also *In re Brown and Saffer*, 173 USPQ 685 (CCPA 1972); *In re Luck and Gainer*, 177 USPQ 523 (CCPA 1973); *In re Fessmann*, 180 USPQ 324 (CCPA 1974); and *In re Marosi et al.*, 218 USPQ 289 (CAFC 1983) final product per se which must be determined in a "product by, all of" claim, and not the patentability of the process, and that an old or obvious product, whether claimed in "product by process" claims or not. Note that Applicant has the burden of proof in such cases, as the above caselaw makes clear.

In regards to claim 6, Droz fails to disclose the following:

a) line width of said coil is not smaller than 7 μm , an inter-line distance thereof is not greater than 5 μm and the number of turns thereof is not smaller than 20 turns.

However, the applicant has not established the critical nature of the dimension of “7 um, an inter-line distance thereof is not greater than 5 um and the number of turns thereof is not smaller than 20 turns.” “The law is replete with cases in which the difference between the claimed invention and the prior art is some range or other variable within the claims. . . . In such a situation, the applicant must show that the particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range.” *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir.1990).

In regards to claim 28, Droz fails to disclose the following:

a) a resistance of said metal-plated layer is less than a resistance of said metal sputtered layer or said metal evaporated layer.

Although Droz fails to specifically disclose the limitations listed above, the same materials are utilized in Droz as in Applicant’s invention therefore it would have the same characteristics. Moreover, claim 1 requires that either the conductive layer includes a metal-sputtered layer or, alternatively, a metal-evaporated layer or a metal-plated layer. Since Inoue has been relied upon as a teaching to use a metal-sputtered layer, no metal plated layer is formed. Hence, the resistance of the metal-plated layer will be less than that of the metal-sputtered layer.

Additionally, the limitation of “metal-sputtered layer or alternatively a metal-evaporated layer and a metal plated layer” makes it a product by process claim. The MPEP § 2113, states, “Even though product -by[-] process claims are limited by and defined by the process, determination of patentability is based upon the product itself. The patentability of a product does not depend on its method of production. If the product in product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the

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prior product is made by a different process." *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985)(citations omitted).

A "*product by process*" claim is directed to the product per se, no matter how actually made, *In re Hirao and Sato et al.*, 190 USPQ 15 at 17 (CCPA 1976) (footnote 3). See also *In re Brown and Saffer*, 173 USPQ 685 (CCPA 1972); *In re Luck and Gainer*, 177 USPQ 523 (CCPA 1973); *In re Fessmann*, 180 USPQ 324 (CCPA 1974); and *In re Marosi et al.*, 218 USPQ 289 (CAFC 1983) final product per se which must be determined in a "*product by, all of*" claim, and not the patentability of the process, and that an old or obvious product, whether claimed in "*product by process*" claims or not. Note that Applicant has the burden of proof in such cases, as the above caselaw makes clear.

Finally, since Droz and Inoue are both from the same field of endeavor, the purpose disclosed by Inoue would have been recognized in the pertinent art of Droz.

In regards to claim 29, Droz fails to disclose the following:

a) the entirety of said coil is formed on a surface of said IC element (31) (For Example: See Figure 8).

7. Claim 3 is rejected under 35 U.S.C. 103(a) as obvious over Droz (U.S. Patent No. 6,176,010) in view of Inoue (U.S. Patent No. 4,960,983) and McDonough et al. (U.S. Publication No. 2001/0044013).

In regards to claim 3, Droz discloses the following:

a) coil is formed on a surface of said IC element formed with input/output terminals with interposition of an electrically insulative surface passivation film (See Figure 6 and Column 3 Lines 43-45).

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In regards to claim 3, Droz fails to disclose the following:

a) IC element and said coil are electrically interconnected through through-holes formed in said surface passivation film and each having a diameter smaller than a line width of said coil.

However, McDonough et al. ("McDonough") discloses the use of through-holes in the dielectric film (See Paragraph 52). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor of Droz to include a through-holes as disclosed in McDonough because it aids in providing electrical contact among the various components (See Paragraph 52).

Finally, since Droz and McDonough are both from the same field of endeavor, the purpose disclosed by McDonough would have been recognized in the pertinent art of Droz.

Response to Arguments

8. Applicant's arguments filed 9/11/03 have been fully considered but they are not persuasive. First, Applicant argues that Droz discloses a plurality of conductive layers that are not adjacent but rather separated by insulating layers. However, Merriam-Webster states that "adjacent may or may not imply contact but always implies absence of anything of the same kind in between." Therefore, Droz does disclose a conductor (8) constituting said coil having a plurality of adjacent conductive layers (2, 2', 2'', 2''') (For Example: See Figure 6). Finally, Applicant argues that "in this system the individual layers form separate electrical devices rather than being combined into a single conductor." However, as stated above Droz discloses a conductor constituting said coil having a plurality of adjacent conductive layers. There is nothing in Droz that indicates that these are separate electrical devices rather than a single conductor that is utilized in a printed circuit.

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Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monica Lewis whose telephone number is 571-272-1838. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amir Zarabian can be reached on 571-272-1852. The fax phone number for the organization where this application or proceeding is assigned is 703-308-7722 for regular and after final communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.



ML

March 18, 2004

Mary Wilczewski
Primary Examiner